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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent application of:

Applicant(s): Michael Hannington
Serial No: 09/742,654
Filing Date: December 21, 2000
Title: ADHESIVE ARTICLES WITH IMPROVED AIR EGRESS
Examiner: Victor S. Chang
Art Unit: 1771
Docket No. AVERP2850US

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. §1.132

Sir:

I, Michael Hannington, declare that:

1. I am the applicant of the above-identified patent application, and the inventor of the subject matter described and claimed in said patent application.

2. I am a Senior Research Associate for the Reflective Films Division of the Avery Dennison Corporation and have been employed by Avery Dennison since January of 1983. I have more than thirty years of experience in the field of heat activated and pressure sensitive adhesives.

3. I have reviewed the Examiner's comments in the Office Action of May 5, 2005 with regard to the characterization of the adhesive of the invention as being a soft viscoelastic material that is not permanently deformable.

4. I have prepared samples of an adhesive article having a pattern of non-adhesive material forms, specifically, UV cured ink, embedded into the pressure sensitive adhesive layer such that the ink did not protrude from the surface of the adhesive layer and created channels in the adhesive layer. The pattern of ink formed a path for air egress from the adhesive article.

5. The process used for preparing the samples was as follows:

An embossed release liner having a tiled, raised hexagonal pattern was used as the printing and embedding tool. The hexagonal pattern was about 75 microns wide, about 25 microns in height and about 600 microns in diameter. The raised hexagonal pattern was printed with UV curable ink using a Cavanagh Flexo Proofer to provide a substantially continuous print on the raised area of the pattern with minimal transfer to the central portion of the pattern. The printed embossed release liner was used as the printing and embedding tool. For comparative purposes, samples were made wherein the raised areas of the embossed release liner were left unprinted.

Using a ChemInstruments HL-101 heated laminator, heated to 195°F, 100 pounds of pressure, and a speed of 2 fpm, the printed embossed release liner was laminated to the adhesive side of a 3 mil thick clear vinyl film, forming an incised hexagonal pattern in the adhesive. The ink was cured using an American Ultraviolet UV cure unit at the 200W setting at a speed of 12 FPM. The printing and embedding tool, e.g., the printed embossed liner, was removed and a PET release liner having a smooth surface was laminated to the adhesive layer. Digital images were made of the adhesive layer through the clear PET liner.

The PET liner was removed and the adhesive surface was laminated to a glass plate using a GBC100 Laminator. The interface between the glass slide and the adhesive layer was viewed under an Olympus Model BX60 microscope and digital images were made of the adhesive surface in areas where printed forms were embedded and areas where the adhesive was embossed, but no printed forms were embedded.

6. Exhibit 1A is a photograph taken through the clear smooth PET liner of the printed ink pattern that was embedded into the adhesive layer. The printed ink pattern appears as connected hexagons. Exhibit 1A shows that when laminated to a flat release surface for storage and transport purposes, the printed channels remain intact. In comparison to Exhibit 1A, Exhibit 1B is a photograph taken through the clear smooth PET liner of the embossed adhesive layer where no ink was printed.

7. Exhibit 2A is a photograph taken through the glass plate to which the adhesive article was laminated. The printed ink pattern that was embedded into the adhesive layer appears as connected hexagons. Exhibit 2A shows that when laminated to a substrate, the printed channels remain intact and produce minimal entrapped air and improved air egress. (The light gray images in the center of the hexagons are excess ink from the printing process.) In comparison to Exhibit 2A, Exhibit 2B is a photograph taken through the glass plate of the embossed adhesive layer where no ink was printed. Exhibit 2B shows that the unprinted, embossed pattern in the adhesive has substantially collapsed when laminated to a substrate. Exhibit 2B also shows trapped air bubbles at the interface between the adhesive layer and the glass plate.

8. The channels created by the embedded non-adhesive material forms remain intact after the adhesive article has been applied to a substrate. The adhesive articles having non-adhesive material forms embedded into the adhesive layer exhibit improved air egress properties.

All statements here made are true and accurate to the best of my knowledge and belief and with the knowledge that willful false statements and the like are punishable by fine or imprisonment or both under 18 U.S.C. §1001.

Date: 10/31/06

Michael Hannington

Adhesive Article Laminated to Smooth PET Liner

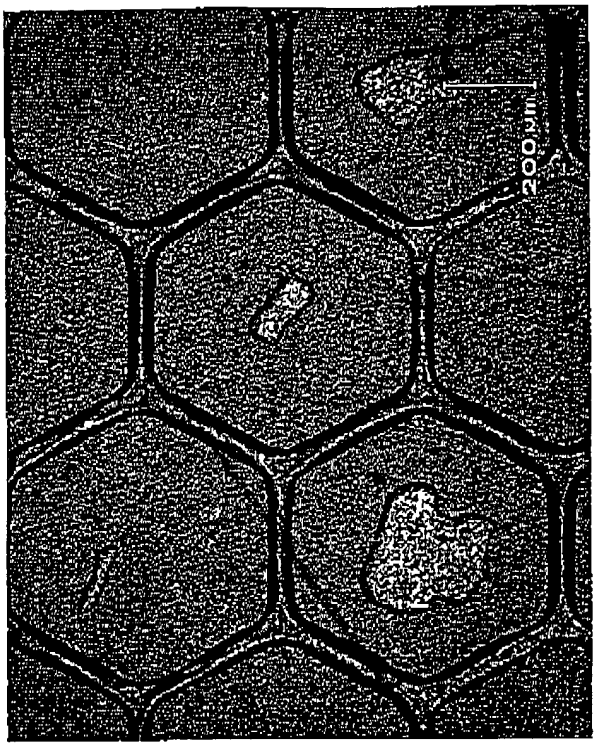

Exhibit 1B
No Print

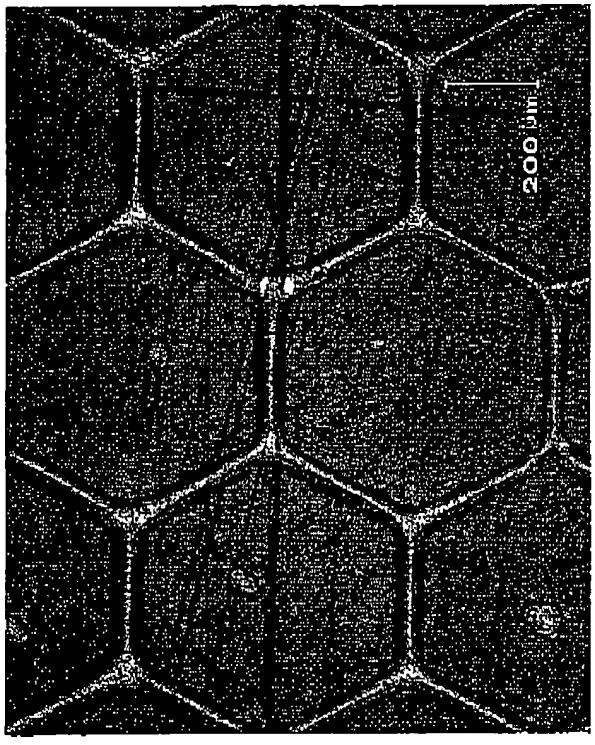

Exhibit 1A
Printed

Adhesive Article Laminated to Glass

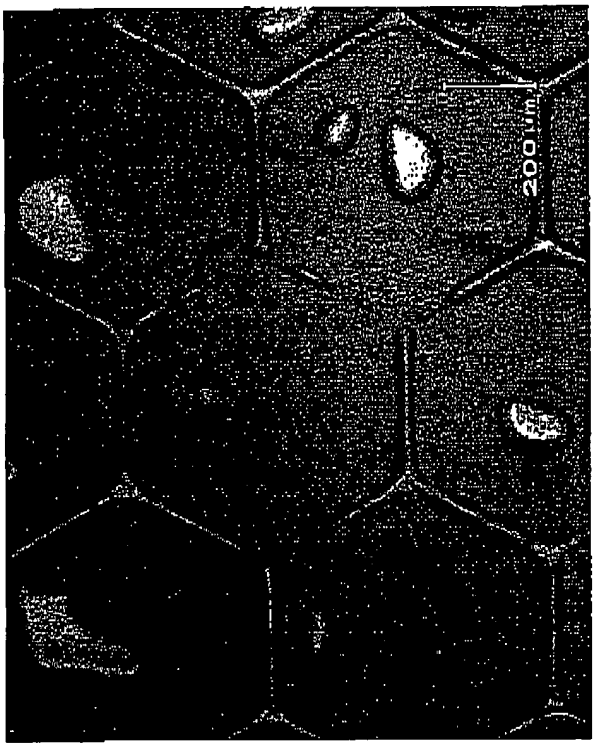

Exhibit 2B
No Print

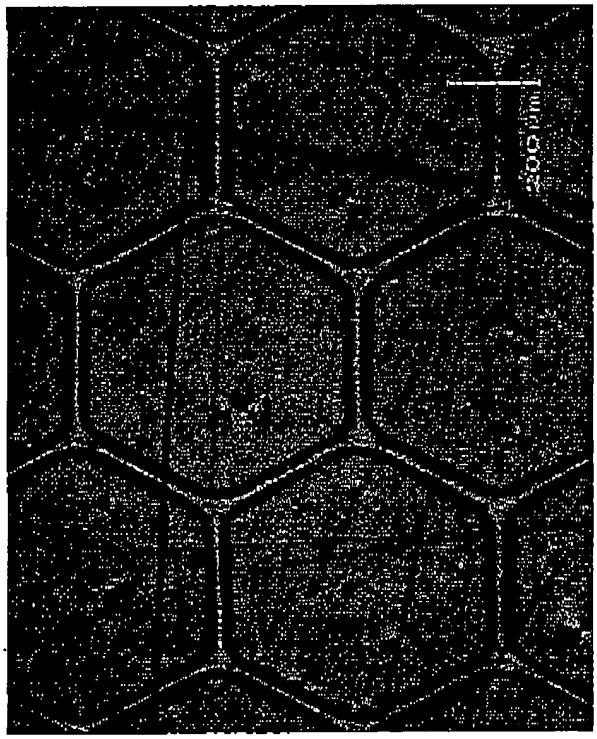

Exhibit 2A
Printed